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ON THE NESTING OF THE NUTHATCH, AS OBSERVED IN NORFOLK.

By F. NORGATE.

IN the cultivated lands and carefully tended woods of Norfolk a dead tree is seldom allowed to stand till it is rotten and soft enough for the Nuthatch, Wryneck, or Marsh Tit to bore their own nesting holes. Here and there an old dead alder may be accidentally left in a rough meadow or on a common, and occasionally a dead Scotch pine may be seen still standing on some neglected spot on the light lands. Such trees are generally riddled by a dozen or more Nuthatches' holes, most of which only penetrate about an inch deep, the wood being apparently still too hard for these birds,

The Nuthatch therefore, to a great extent, depends on the Great Spotted Woodpecker as an engineer. In taking possession of the nesting holes so industriously bored (through the living wood into the softer rotten heart-wood) by this Woodpecker, the Nuthatch has a formidable rival in the Starling, which bird (so far as my experience goes) usurps about ninety per cent. of the Green Woodpeckers' nests as soon as they are bored, and nearly as many of the Great Spotted Woodpeckers' nests also are used in their first or second year by Starlings.

The great preponderance in the number of Starlings makes the competition for nesting sites very serious for Nuthatches and Woodpeckers, especially for the latter birds, which, I believe, are not unfrequently obliged to lay their eggs on the ground. I once found a Green Woodpecker's egg on the grass near the foot of

the tree where the nest had just been taken possession of by Starlings, and I heard of another Woodpecker's egg having been found in a similar situation near its nest, which was also usurped by Starlings.

Fortunately for the Nuthatch, it can use a smaller hole than the Starling can, and it has the habit of reducing the size of the Woodpecker's nest-entrance by plastering it with very hard clay. The Nuthatch also nearly fills up the cavity of the nest (however large it may be), so that, when sitting on its eggs, the bird's beak is conveniently near the entrance. I have never seen a fight between Nuthatches or Woodpeckers and Starlings, but I am inclined to believe that the Starling perches on the top of the tree, and watches its opportunity for entering the nest when the rightful owner is absent.

The following notes made in different years may perhaps induce other observers to give evidence on the subject:—

At Weston Longville, on May 18th, I examined a Nuthatch's nest of five eggs in a hole in an old nut tree. The entrance hole was lined with very hard clay, discoloured with small bits of lichen, and indented everywhere by the bird's beak, so as to resemble the lichen-covered bark of the nut-bush. The eggs were buried in a bed of bark of *Pinus sylvestris*. This bed was about two feet thick, nearly filling the hollow trunk of the tree. The bark (of which this bed was composed) consisted of extremely thin scales, almost transparent, and evidently taken from the boughs or the upper part of the stem of the pine. The Nuthatch seemed to have some difficulty in struggling out through the clay-lined entrance.

At Sparham, on May 25th, I had a Nuthatch's nest of five eggs in a hollow post* covered with an inverted flower-pot, with a hole in the side. The birds lined the flower-pot with clay about an inch thick, and buried the eggs in scales of pine bark.

At Weston Longville, on May 27th, I saw five young Nuthatches in a hole in a large oak. For this nest no clay is recorded in my diary, nor do I remember seeing any.

At Sparham, on May 5th, the following year, Nuthatches nested again, and laid six eggs in the same inverted flower-pot which they used before. The nest was made of pine bark, and the pot lined with about an inch of clay as before. The pot

* This post was of pine with the bark on it.

being soaked with rain, the clay lining fell on the nest and broke one egg.

At Hackford, on or about the 29th of June, I saw a hollow ornamental iron gate-post, which was lined half-way up with clay by Nuthatches, and about half filled with their nest, which I was unable to examine farther.

At Fritton Decoy (Suffolk), on April 26th, I saw a Nuthatch's nest very high up in one of the large arms of a huge oak tree; the hole seemed to have been bored by *Picus major*, but was practically so inaccessible that I did not try to climb up to it.

Near Sparham, on the 8th of May, 1876, I saw three Nuthatches' nests in oak and ash trees. One, in an old nesting hole of *Picus major* in an oak, contained eleven eggs. The second nest contained young birds. Both nests had the usual bed of pine bark, and very hard clay lining reducing the size of the entrance, so that there was barely room for the Nuthatch to go in or out. In the same oak containing the nest of eleven Nuthatches' eggs was a fresh nest of *Picus major*, which (on the 19th May) contained four eggs, sat on. The third Nuthatch's nest, also in an old hole of *Picus major*, was usurped by Starlings.

At Sparham, on the following day, in a wooden box lined with clay, I found a Nuthatch's nest of pine bark, containing nine Nuthatches' eggs and two or three Redstarts' eggs at the same time. The eggs were covered with thin scales of pine-bark. I do not remember seeing either the Nuthatch or the Redstart on this nest, and it was unfortunately robbed before I visited it again.

At Foxley, May 23rd, 1876, a Nuthatch's nest, which I found in a hollow place in an oak tree, consisted of dead leaves and birch bark. There are no pine trees near this place. This nest contained three fresh eggs, which were afterwards forsaken. My diary does not record any clay for this nest, and I do not remember seeing any in it.

At "The Islands," in the parish of Dilham, May 27th, 1876, I saw a Nuthatch's nest in an ash tree in a hole where *Picus major* hatched off last year. This Nuthatch's nest contained seven white eggs, like those of *Picus minor*, except that two were very slightly spotted. The entrance was lined with clay. In the bottom of the hole, below the bed of pine bark of the Nuthatch's

nest, was a damp black mass sparkling with the remains of green and blue bottle flies, &c., and doubtless left there by the Woodpeckers. At the same place and on the same day I examined three other holes of *Picus major*, also in ash. In one which had been lately clayed up by a Nuthatch, I found a Starling's nest of five eggs. As to the following incident about the Starling, I unfortunately made no note of it at the time in my diary, but I feel sure that a Starling flew out whilst I was examining the nest, and that I took from under the Starling's nest an old dried body or skeleton of another Starling.

Near Sparham, on May 21st. 1877, I found a clutch of seven Nuthatches' eggs (sat on) in the same hole which contained a clutch of eleven eggs the previous summer. Nest as usual of pine bark and clay. On the 25th I examined another nest, also of pine bark and clay; the eggs were nearly hatched, and had the leaden hue which they (and the eggs of the Titmice also) gradually acquire during incubation. This colour is partly caused by the eggs becoming less transparent, but chiefly by some very fine dirt or colouring-matter which can be washed off; it is probably a mixture of turpentine and lichen dust from the pine bark.

In the same place the following year, on the 30th June, I saw another nest of five eggs, with pine bark and clay as usual.

In 1879, May 9th, in the same locality, I saw two Nuthatches' nests, both in ash trees, eight eggs in one, and seven eggs in the other. Although I put the birds off (and they were both "sitting"), the eggs were covered with pine bark in both nests. There was also a little hazel bark and a few dead leaves with the pine bark. The holes were as usual lined with clay. One hole, if not both, was originally made by *Picus major*. A Starling, dead and stinking, partly blocked up the entrance of one nest, and the Nuthatch was sitting with its bill almost resting on the dead Starling. The Starling was nearly (but not quite) dried up, and the Nuthatch had to pass over its body to go to or from the eggs.

On the 17th of the same month I examined another Nuthatch's nest a few hundred yards from the two last described. It contained five eggs (sat on) in an old nest of *Picus major*, which had been used also by the Great Titmouse and by Starlings. The entrance was lined with clay. This nest was of pine bark, a few dead leaves, lumps of hard clay, and bits of dead wood.

Under all this were the putrid bodies of two dead Starlings. Had these Starlings been purposely clayed up and starved, or killed by Nuthatches?

At Taverham, on the 22nd of the same month, I saw a Nuthatch's nest in a walnut tree. Entrance hole lined with clay. Nest of pine bark, and containing two or three eggs apparently of *Parus cæruleus* buried in the bark, and mixed up with green moss, probably part of the nest of a Blue Tit, which was rather noisy in the next tree at the time. A Nuthatch was also calling in this tree or the next one (a few feet off). I found no Nuthatches' eggs here, but I believe the Nuthatch still claimed this nest, and intended to use it in spite of the Titmouse. One morning, a few years ago, I was watching from my bedroom window a Nuthatch which was peeping into a Blue Tit's nesting-box which I had fixed on the window-sill. Suddenly a Blue Tit darted at the Nuthatch, and knocked it down, falling with it to the ground. The Nuthatch seemed perfectly helpless, and glad to avail itself of the first opportunity to fly away, after receiving about a dozen sharp strokes in very rapid succession from the Blue Tit's beak. In this case the Nuthatch was "in the wrong box" (or nearly so), and was evidently taken by surprise. I think it is well able to defend its own nest against other birds generally, unless Starlings get in before the clay is hard. Even then it seems that Starlings do not always come out alive.

Woodpeckers' nests are frequently used by the Great Bat, and probably by other bats, but I never identified more than the one species named. I have found Great Bats in Woodpeckers' nests both in winter and in summer. These bats make the nests so foul that I doubt if either Woodpecker or Nuthatch would again make use of them.

Fungi also take possession of these nests sometimes, and so quickly do they grow that fresh eggs are occasionally embedded in the solid hard wood of a *Polyporus* as perfectly as a fossil shell might be in its matrix of flint or chalk. I can well imagine that some of the perennial *Polypori*, such as *Polyporus fomentarius*, might preserve eggs for many years. I once opened a Green Woodpecker's nest by boring a fresh hole into the bottom of it. The bird was in, but there were no eggs, so I plugged up the hole I had made by hammering a dead bough into it. Several days afterwards I reopened it, and found the base of the cavity

filled by a very hard fungus, which I did not take the trouble to identify. Embedded in this fungus were three Green Woodpecker's eggs, which I had great difficulty in carving out with a chisel. On the top of the fungus were four more eggs mottled and spotted regularly all over with rich brown stains, but beautifully polished, as if the colour was natural. They much resemble the eggs of the Common Sandpiper in colour and markings. On another occasion I found in an old nest of *Picus major* a clutch of Blue Tits' eggs stained almost black, but this stain was possibly caused by sap from the oak tree.

The fungus which I have found most commonly blocking up Woodpeckers' nesting holes is *Polyporus squamosus*; and I have seen a tall straight Lombardy poplar, dead and white, minus bark and boughs, and minus the top, which had been snapped off at a weak point, where was a Woodpeckers' nest, so picturesquely ornamented by the huge pilei of *Polyporus squamosus*, and so interestingly full of Woodpeckers' holes, Starlings' nests, and Great Bats, that the owner allowed it to stand until felled by the wind.

ORNITHOLOGICAL NOTES FROM DEVON AND CORNWALL.

BY JOHN GATCOMRE.

A STORM Petrel was picked up dead on the rocks at the Devil's Point, Stonehouse, on the 7th of September last. It was rather emaciated, and had sustained some injury at the carpal joint of one wing, the bone appearing diseased, the skin scurfy, and easily peeled off. On the same date a large number of Sandpipers of different kinds passed over the town at night, making a great noise. On the 15th I visited Salcombe by steamer, and observed large parties of Cormorants on every headland, besides numbers in the water; indeed, I never knew them so numerous, and my friend Mr. Clogg writes from Cornwall to the same effect, saying that he sometimes saw as many as thirty or forty standing together on the rocks at the eastern point of Looe Island. Gannets, both old and young, were also very plentiful, most of them resting on the water, which was unusually calm; but they invariably rose and flew off on the approach of the

vessel. Oystercatchers were likewise to be seen along the coast. On the 29th a Long-eared Owl was brought to one of our bird-stuffers, and I may here mention that there appears to have been quite a migration of these birds into Devon and Cornwall, as the same man received five in about a fortnight, and at the time of my writing this note had no less than nine in his shop, all recently killed. I heard also of others having been obtained. The stomachs of those I examined contained nothing but the remains of mice.

On October 6th flocks of Titlarks and Rocklarks had arrived on the coast, most of which were in nice plumage. Another Storm Petrel was obtained alive, and many Whimbrels were heard flying up the rivers. On the 15th, the wind blowing very cold from the east, small parties of Swallows were flying towards the north-east, and flocks of Skylarks coming from the eastward. Unusual numbers of Golden Plover were brought into our markets and game shops considering the time of year, and amongst them a few Redshanks. On the 15th also I observed a small flock of Purple Sandpipers on the coast, rather early for this species. Mr. Clogg mentions having seen some in Cornwall also. They are not generally met with in the neighbourhood of Plymouth until the beginning of November. On the 29th there was a Black Redstart on the rocks near the Devil's Point, a day earlier than I ever noticed one before in this locality. A large flock of Scoters was seen flying across the Sound in the morning. They generally visit us at this season, especially should the wind be easterly.

On November 1st a young Red-throated Diver was killed in the Sound, and Mr. Clogg informed me that on the 5th he watched a Great Northern Diver off Looe which had not completed its autumnal change, there being some white patches still on the scapulars, and the rings round the neck not yet obliterated; he also mentioned having seen Swallows on the 4th. Two Common Buzzards were brought to a Plymouth birdstuffer, both caught in gins; and I also examined an adult Merlin killed in the neighbourhood. An adult Cornish Chough, I am sorry to say, was likewise sent for preservation. Woodcocks were very plentiful at this date in our markets, and amongst them I noticed two Corn-crakes, Common Redshank, Bar-tailed Godwit, and a Turnstone. The following wildfowl were also to be seen hanging on the

stalls :—Scaups, Scoters, Tufted Ducks, and a large number of Mallard, Widgeon, and Teal.

Two Pomatorhine Skuas were killed outside the Breakwater on November 10th, and another found dead in a ditch far inland greatly decomposed, but I am glad to say not too bad to be preserved. On the 20th I observed a flock of eight Brent Geese flying across the Sound in the direction of the Laira Estuary; and a friend told me that he had lately seen a very large flock of wild-fowl flying up one of our rivers in the form of a V, but they were too high for him to be certain of the species. On November 20th I noticed in the market two immature Goosanders, five Shovellers, and a Sheldrake. As for Snipes, I never saw them in such numbers, and fear that most of them must have been wasted. Our harbours for the previous two months were full of young Herring Gulls; and I have often been amused with their habit of chasing the old ones and each other, like Skuas, for what they may have picked up. The Common Mew, too, I am glad to say, seems to be becoming more plentiful than it has been of late years; but I have always thought "Common" a misnomer for this species, as it certainly is not nearly so common as some other Gulls.

During the month of December the following birds were obtained on our rivers and estuaries:—several Sheldrakes, Goldeneyes, Pochards, Pintails, one Bean Goose, and two Smews in immature plumage. On examination I found the stomachs of the Sheldrakes to contain very minute shells and fine sea sand, and those of the Golden-eyes mostly shrimps.

A Grey Phalarope was killed on the St. Germain's River by a friend of mine, who reported having seen more than a hundred Oystercatchers on the river-bank, but that they were too wary to let him get within shot, and by their cries alarmed every other bird on the river. The Phalarope was not in the usual plumage of winter, but the grey of the back was intermixed with several dark feathers similar to that of a young bird in autumn. A Great Crested Grebe was brought to one of our birdstuffers, and its stomach contained a quantity of feathers plucked from its own body. I have always remarked that the appearance of Sheldrakes and Grebes in this locality betokens very severe weather; but, strange to say, during the whole continuance of the frost I did not observe a single Fieldfare or even Redwing in

the vicinity of the town, or on the immediate sea-coast, where last year there were several thousands. Missel Thrushes, too, were also very scarce, and I feared were totally exterminated by the "hedge-poppers" and extreme cold of last winter, but I am glad to say that a few are still to be seen in the neighbourhood. The wet summer last year seems to have played sad havoc with the young Kingfishers, for I did not observe one on the sea-coast during the whole of last autumn.

I have already mentioned that there was quite an immigration of Long-eared Owls, and since my note to that effect sixteen more have been brought to our birdstuffers, besides the usual number of the short-eared species. It seems strange that nothing has been said of their appearance in other places; but perhaps they might not have been distinguished by sportsmen from the usual so-called "Woodcock Owl." The stomachs of all the Long-eared Owls I examined were filled exclusively with the remains of mice, whilst those of the Short-eared species generally contained the feathers and legs of Thrushes and other small birds.

ORNITHOLOGICAL NOTES FROM NORFOLK & SUFFOLK.

By T. E. GUNN.

ALTHOUGH the greater part of the following notes were made so long ago as 1878, they may yet be of sufficient interest to ornithologists to warrant their publication:—

PEREGRINE FALCON.—On February 9th, 1878, a male Peregrine was killed by the keeper in Kimberley Park; it had moulted its adult plumage, excepting the upper wing-coverts. It was in very poor condition, and had apparently received some previous injury. It weighed only seventeen ounces. Its stomach contained several large thread-worms, some measuring as much as eight inches and a half in length.

COMMON BUZZARD.—A male of this species was shot at Stratton-Strawless, near Norwich, on March 9th. It was in splendid plumage, the feathers being very handsomely barred. Its stomach was full of rabbit flesh and fur. λ

BARN OWL.—Mr. W. W. Spelman, of Yarmouth, when out shooting in that neighbourhood on September 2nd, killed a Barn

Owl with unusually dark plumage; the whole of the breast, abdomen, and under parts being of a uniform deep buff colour.*

REDWING.—On January 5th a male Redwing, obtained at Neatishead, in Norfolk, was piebald about the head and neck, and had several white feathers in the wings.

TWITE.—Four adult males with red breasts were caught by a birdcatcher in a field near Norwich on March 15th, and were purchased by me for my aviary.

HAWFINCH.—Between Nov. 28th and the end of December about a dozen Hawfinches, nearly all males, were killed near Somerleyton railway-station, in Suffolk; and on December 19th and 22nd three adult males were shot in a market garden at East Carleton, near Norwich.

GREENFINCH.—A peculiarly coloured variety was shot at Yoxford, in Suffolk, on November 27th, by Dr. Baylie of that town. On examining it I found it to be an adult male; the whole surface of its plumage of a pale buff colour, lighter in tint on the throat, abdomen, tail, and tips of wings. The outer edges of the primaries were tinged with pale sulphur, beak and legs of pale brown, and eyes as in ordinary examples.

WAXWING.—Mr. J. Wormersley told me he saw a solitary Waxwing in his garden at Thorpe on Christmas Day.

HOOPOE.—An adult female Hoopoe was sent me for preservation, on August 3rd, from Beccles. It was shot during the same afternoon in that neighbourhood.

STARLING.—An albino Starling, which proved to be an immature male, was shot at Attleborough on August 1st, and brought to me by a farmer of that parish. It had just moulted a few glossy feathers of its mature dress, which were also white. The tip of the lower mandible was gone,—probably shot away,—and the upper mandible had grown much beyond the usual length.

LESSER SPOTTED WOODPECKER.—A pair of these birds were seen at Rareningham, in Norfolk, on February 18th. The male was shot and sent to me. It weighed three-quarters of an ounce. The Earl of Kimberley states that these little birds have been repeatedly seen in his park during the last three or four seasons, but cannot say they have ever bred there; he has given strict orders for their preservation. Several pairs of *Picus major* breed

* See Stevenson's 'Birds of Norfolk,' vol. i., p. 53.

there every year, but the nest of *P. minor* has not yet been found in Norfolk. A male specimen of *Picus minor* was shot at Harleston in April, and was set up by an amateur, of whom I recently purchased it.

LITTLE BUSTARD.—An adult female Little Bustard was shot at Caistor, two miles north of Yarmouth, on September 12th, and came into my possession. I found its stomach filled with green food, consisting of leaves and tops of plants. The ovary contained some eggs as large as millet seed. In total length it measured 18 inches; in the wing, from the carpal joint, nearly 10 inches; and across its fully extended wings to tip of each, 36 inches; the tail, $4\frac{1}{2}$ inches; middle toe and claw, $1\frac{1}{2}$ inch; outer toe and claw, $1\frac{1}{8}$ inch; inner toe and claw, 1 inch; bill along the ridge of upper mandible, $1\frac{1}{8}$ inch; tibia, $3\frac{3}{4}$ inches; tarsus, $2\frac{5}{8}$ inches; iris, yellow; weight, 1 lb. 11 oz. It is rather remarkable that nearly all the specimens of the Little Bustard which have occurred in Norfolk of late years have proved to be females.

PEEWIT.—Amongst several Peewits that were killed on New Year's Day and sent me, my attention was especially struck with the singular appearance of one, whose legs and feet were covered with a number of warts or excrescences. I counted as many as twenty-three on one leg and foot, and seventeen on the other; they were clustered principally around each knee-joint and the base of each foot. I have previously noticed, although very rarely, an isolated wart or two on the legs or toes of certain birds; but the above is the only instance that has come under my notice (out of the many birds that have passed through my hands) in which a bird has been so much infested with this disease; I therefore think it must be of unusual occurrence.

NORFOLK PLOVER.—A female Norfolk Plover was caught in a rabbit trap on November 19th at Burgh St. Peter, near Great Yarmouth. I had one sent me from Hickling two years since caught in the same manner.

KENTISH PLOVER.—Two or three specimens of the Kentish Plover, a few Red-breasted Godwits (Bar-tailed), Turnstones, and Grey Plovers were seen on the Breydon Muds, Yarmouth, on April 19th, and on the 23rd of same month a female of the former species was shot. An adult female of the Kentish (locally called "Alexandra") Plover was shot in the same locality on

October 16th, and sent me; another, also a female bird, was killed about the same time, and is now in Mr. Spelman's collection at Yarmouth. During the month of August a male Little Stint in adult plumage, a red Knot, and two Bar-tailed Godwits—one red, the other partly so—were sent me up from Aldeburgh, in Suffolk; a Sanderling in full winter plumage and several Knots were sent me from same locality on January 15th.

TURNSTONE.—On May 15th, being on Breydon in a punt, I saw two old Turnstones on the mud-flats, and was much interested in watching their actions by the aid of my field-glass. They were very tame, and allowed me to approach within thirty yards of them.

TEMMINCK'S STINT.—On August 24th Mr. R. F. Harmer, of Yarmouth, shot the most immature specimen of Temminck's Stint I ever saw killed in Norfolk. It was a female by dissection, and in total length measured $6\frac{1}{4}$ inches in length; across fully extended wings, 12 inches; carpal joint to tip of longest primary, $3\frac{1}{2}$ inches; tarsus, $\frac{1}{2}$ inch; bill, $\frac{1}{2}$ inch; tail, 2 inches; middle toe and claw, $\frac{1}{2}$ inch.

PURPLE HERON.—The Purple Heron mentioned at page 159 of 'The Zoologist' for 1879 as having been killed during the middle of December, 1878, was shot on the 17th of October previous, and sent up to me the following day from Yarmouth.

NIGHT HERON.—An adult male was obtained on May 10th, 1879, in the parish of Mendham, near Harleston. A young man named Chesney, a workman at the mill, saw a curious bird towards evening fly across an adjoining field, and alight on the branches of a tree; he immediately procured a gun, and walking up to the tree shot it easily; he called it a young Hearnshaw, and afterwards gave it to Mr. Read, farmer of that parish, from whom I subsequently obtained it. It was in perfect plumage and condition, and had two long white feathers in its crest.

BITTERN.—One was shot near Yarmouth on February 13th.

POLISH SWAN.—On February 16th a fine adult pair were shot on Wroxham Broad; both had perfect wings, the male weighing 22 lbs., and the female 19 lbs., and measuring five feet in length, the male being two inches longer.

EGYPTIAN GOOSE.—Mr. R. H. Gillett killed one of these birds on December 19.

GADWALL.—A male Gadwall, rather a scarce duck in Norfolk, was shot on December 26th at Lynn, and on the same day a male Shoveller was killed at Yarmouth.

GULL-BILLED TERN.—On May 8th an adult specimen was killed at Yarmouth by a Breydon gunner, and sold by him as a Sandwich Tern; it changed hands several times, but was unfortunately kept too long, the weather at the time being warm, and favouring decomposition, so that when I saw it, several days after it was shot, it literally dropped to pieces, and was quite unfit for preservation. I had, however, fortunately received another specimen which was killed on the same day at Yarmouth; this was doubtless the companion to the first-named, for two were seen together by the gunner referred to. On dissection, this latter bird proved to be a female, the ovary containing a large cluster of eggs, several as large as hemp-seed. The bill, legs, and feet were black, eyes dark brown, and the following are the dimensions:—Total length (beak and tail included), $15\frac{1}{2}$ inches; fully extended wing to extreme tips, 36 inches; wing carpus to tip, 13 inches; bill along curve of upper mandible, $1\frac{1}{2}$ inch; bill depth at base, $\frac{1}{2}$ inch; tail (tip to root included), $5\frac{1}{4}$ inches; weight, 7 ozs.

BLACK TERN.—An adult female Black Tern just assuming its winter plumage, and showing the forehead and throat white, was killed at Yarmouth on August 6th. In this change this species is of rather unusual occurrence here. I shot a similar specimen during the corresponding period of 1873 on Hickling Broad, this being also a female.

RED-THROATED DIVERS.—I saw three of these birds in our market on November 7th, and was told they had been sent up from the Broad districts. I had one sent me that was killed at Rockland, about seven miles from Norwich, and the Rev. C. J. Lucas told me one was killed on Filby Broad on the 13th.

BLACK-THROATED DIVER.—A male in immature plumage, but showing a few square white spots on its back and shoulders, was shot on Oulton Broad, near Mutford, on November 15th.

LITTLE AUK.—Two Little Auks, male specimens, were picked up near Norwich, and sent to me on November 9th. One was found at Plumstead Parva not quite dead; these birds had been driven inland by the severe storm that prevailed the previous night.

In concluding these notes, I may add that nearly all the birds mentioned passed through my hands, besides several others which have been already recorded in 'The Zoologist.'

OCCASIONAL NOTES.

ANIMAL SOUNDS.—In the 'Complaynt of Scotland,' 1549, a reprint of which, edited by Mr. A. J. H. Murray, appeared in 1872, the following quaint passage occurs:—"The *Nott* (neat cattle) made noise with many a loud *lou*. Both horse and mares did fast *nee*, and the foles *nechyr*. The bulls began to *bullir* when the sheep began to *blait*, because the calves began to *mo*, when the dogs *berkit*. Then the swine began to *quhryne*, when they heard the ass *rair*, which made the hens *kekkyll* when the cocks *creu*. The chickens began to *peu* when the glade *quhissillit*. The fox followed the fed geese, and made them cry *claik*; the goslings cried *quhilk*, *quhilk*, and the ducks cried *quaik*. The *ropeen* of the ravens made the cranes *crope*; the hooded crows cried *varrok*, *varrok*, when the swans *murnit*, because the grey goul man (gull men) prognosticated a storm. The turtle began to *greit* when the cushat *zoulit*. The titlene (hedgesparrow) followed the goilk (cuckoo), and made her sing *guk*, *guk*. The dove *croutit* her sad song that sounded like sorrow. Robin and the little wren were homely in winter. The *iangolyne* of the swallow made the jay *iangil*. Then the mavis made mirth for to mock the merle. The laverock made melody up high in the skies. The nightingale all the night sang sweet notes. The tueichitis (lapwings) cried *theuis nek* when the piettis (magpies) *clattirt*. The *garruling* of the starling made the sparrows *cheip*. The lyntquhit (linnet) sang counterpoint when the ouzel *zelpit*. The green serene (green linnet) sang sweet when the gold spynk (goldfinch) chanted. The redshank cried *my fut*, *my fut*, and the oxeye (tomtit) cried *tueit*. The herons gave a wild *screech* as the kyl had been on fire, which made the quhapis (curlews) for fleetness fly far from home."

HABITS OF THE STOAT.—At p. 122 of 'The Zoologist,' Mr. Gatcombe remarks upon the so called "ermine" dress of the Stoat, "Specimens are met with in their white, or partly white, winter dress in comparatively mild seasons." Such is my own experience, and having from time to time seen many specimens, I am inclined to think that the severity of the weather is not the whole cause of the change of colour; and I am further confirmed in my supposition from the fact of having seen one in its partly white dress as early as October of the present year. Whether it is usual for them to

change colour previous to the winter months I am not in a position to say. When are the creatures supposed to assume their winter garb, and is it well known in what manner the change of colour is affected? If the one I saw had been endowed with reasoning faculties, and the power of changing its own coat, I might have said that its experience of the past summerless season had induced it to anticipate a correspondingly cold winter, or that the summer was not sufficiently warm to warrant a change from last winter's outfit. Mr. Bond says (Zool. 1879, p. 455) he has never seen a true albino Stoat. Neither have I; but a few winters ago I saw one wholly white, with the exception of the smallest patch of brown—no larger than a sixpence—upon the crown of its head, and the characteristic black tip to its tail, which latter was very conspicuous from the unusual whiteness of the rest of the body; for it doubtless has been observed that the white colour in many specimens is tinged with a yellow or pale brown shade, but possibly the more entire the change the whiter the individual becomes. I ought here to remark that the above specimen had not pink eyes, and consequently was not a true albino. Possibly, however, an animal that periodically changes its colour cannot be called an albino at all, but to come under that designation it must be altogether and always white. While on the subject of Stoats, I may be allowed space for the following notes:—Some time ago when out entomologizing along the hedge of a ploughed field, my attention was attracted to a certain spot at no great distance, from whence proceeded a peculiar cry; standing quite still, to ascertain if possible the cause and purpose of such a performance, I saw a large rat emerge from the hedge and run out some distance upon the ploughed land, but only to return again and enter the hedge at a different point from where it had first appeared. I had not time to ask myself what could be the cause of such apparently strange behaviour, when I saw a Stoat make its exit from the hedge at exactly the same place as the rat had done, and, with back arched and nose to the ground, it seemed to follow every footstep of the poor doomed rat, like a bloodhound on the trail, back into the hedge again. The Stoat had scarcely entered the hedge when the cry of the rat became more piteous and piercing, and I hastened cautiously to the spot to see if possible the end of the fray; the density of the hedge, however, prevented my doing so, although I could hear a rustling and the gradually decreasing cry of the rat. It was evident the Stoat had no idea of forsaking its victim until it had accomplished its work, for having cleared aside the brambles, &c., sufficiently, I found the rat almost dead, with the least indication of blood behind one of its ears. Is it customary for the Stoat thus to hunt by scent, as well as by sight? In the case just cited it seemed to make far more use of its nose than of its eyes, and the rat certainly appeared unable to exercise the all-powerful right of self-preservation, and to be held in thrall by the strange fascination which these

creatures are said to have over their victims. During the past summer, I was one afternoon standing at an open window overlooking a large lawn, when I saw a rabbit acting in a most peculiar manner, running apparently in circles, and, as far as the intervening bushes would allow me to observe, each circuit decreasing the diameter of its rounds, until at last I lost sight of it altogether behind the bushes. I thought at first it was playing with one of its own kind, as rabbits often do in the early evening; but as I saw no other anywhere near the spot, I for a moment questioned myself what could be the cause, but was not long in doubt, for it had disappeared behind the bushes but a short time, when I heard the cry which only too plainly told that a Stoat was doing its deadly work. I was too far off to hear if the rabbit made any noise during its gyrations; if it did so, the cry must have been much fainter than when the Stoat fastened on to its neck. It was some little time after the above performance when I went to look at the spot where it had taken place, and thinking the Stoat might still be in the vicinity I crept quietly thither. The Stoat, however, saw me long before I reached the place, and proceeded to make off across the lawn, and I could not but admire the actions of the artful little beast; if I stood still it would rise up on its hind legs, and move its head from side to side as quickly as possible, at the same time uttering a faint kind of squeal, as if annoyed at my presence, but if I advanced a step, either towards itself or the rabbit,—which was lying dead at no great distance,—it would lie flat upon its belly, vainly endeavouring to hide amongst the closely-mown grass. Is not the power of fascination said to be in the eye of the creature exercising it? In the case of the rabbit it might have been so, but with the rat it must have been different, and yet neither seemed to have the power of escape from their bloodthirsty enemy.—G. B. CORBIN (Ringwood, Hants).

[Replying to our correspondent's queries, we may remark that we once came upon a Stoat in Selborne Hanger, which had assumed a good deal of its white winter coat in the month of October. We do not regard this change as dependent upon severity of weather, but as analogous to the change of plumage in birds which takes place at particular seasons as a rule, irrespective of temperature, although we do not doubt that sudden changes of temperature may operate to hasten or retard the change. We do not remember to have seen a Stoat in midwinter retaining its summer coat, or a pied or white Stoat in summer time. That this animal hunts by scent we have long been convinced, having repeatedly proved it to our satisfaction by personal observation.—ED.]

CURIOUS ACCIDENT TO A HARE.—A curious fate befel a Hare during the late severe weather in one of the dew-ponds of the elevated chalk range of this neighbourhood, which may be worth noticing. The unfortunate animal, either to elude her pursuers or during her nightly ramble, trusted herself

on the treacherous pathway of newly-formed ice, and, falling in, lost her life; but not by drowning, for the upper part of the head and nose were protruded through and above the ice. It is probable, as is usual with snared Hares, after finding her struggles unavailing, she remained tranquil, with the only effort of keeping her head up. The icy collar in so exposed a spot (upwards of 800 feet above the sea-level) would form itself almost momentarily when undisturbed, and prevent the lifeless body from sinking. The Hare was seen for the first time on Monday, December 1st, when the minimum temperature on the previous night, in this more sheltered district, at an altitude of only 340 ft., was as low as 26°. On the following Friday a labourer exhumed her, and brought her to his *cuisine*, and pronounced her to be the very best Hare he had ever tasted. There is an incident narrated by the Abbé Huc, in 'Les Souvenirs d'un Voyage dans la Tartarie et le Thibet,'—a book full of amusing stories, more romantic perhaps than veracious,—which bears somewhat upon the above narrative. He describes himself as crossing a Thibetian frozen river, on his journey to Lasso, capable of bearing the weight of his cavalcade, and observing a number of small black objects protruding through the ice, he was told by the attendants they were the noses of a herd of wild cattle (*Yak*) which had been entrapped at the time of passing from one bank to the other. The Abbé makes no mention of the horns, which must have interfered more with his progress, had they been there, than the noses.—J. C. MANSEL-PLEYDELL (Whatcombe).

HARVEST MOUSE IN SUFFOLK.—On November 31st I obtained a nest of the Harvest Mouse from Leiston. It was built about three feet from the ground, among some straggling blackthorn bushes growing by the side of a ditch. Some years ago I found a nest of this little animal built in a plant of the common broom. These tiny creatures are fond of frequenting the tall rank herbage growing by the sides of ditches. — G. T. ROPE (Blaxhall, Suffolk).

ON A PARROT PERFORMING A SURGICAL OPERATION ON LIVING SHEEP.—On the 4th of November last the distinguished surgeon, Mr. John Wood, F.R.S., exhibited before the Pathological Society of London the colon of a sheep, in which the operation known as Colotomy had been performed by a Parrot. The specimen, together with a skin of the bird, had been sent to him for this purpose by Mr. De La Tour, of Otago, New Zealand. The Parrot was the species known as the "Kea" by the Maories, the "Mountain Parrot" of the colonists, *Nestor notabilis* of Gould (Proc. Zool. Soc. 1856, p. 94). Only five species of the genus *Nestor* are known, one of which (*Nestor productus*) has lately become extinct; they only occur in New Zealand and Norfolk Island. They were formerly classed among the *Trichoglossinæ*,

or brush-tongued, honey-sucking Parrots, even by such recent authorities as Dr. Finsch (1867) and Prof. Sundevall (1872); but the late Prof. Garrod has shown (Proc. Zool. Soc. 1872, p. 787 f, and 1874, p. 586 f) that they are much more nearly allied to the true *Psittaci*, notwithstanding the delicate fringe of hairs that forms a kind of flat brush at the tip of the tongue, and it is now generally agreed that a separate subfamily *Nestorinae* must be formed for their reception. Twenty years ago the "Kea" was very little known, but it is now found to be abundant in the higher regions of many parts of the South Island, whence it only descends to the more inhabited plains during severe winters. Its ordinary food consists of berries and insects; but since its alpine haunts have been reached by the tide of civilisation it has acquired a taste for raw flesh, to obtain which it even attacks living animals. Dr. Buller, in his 'Birds of New Zealand' (1872, p. 94 f.), writes of this bird:—"Those that frequent the sheep stations appear to live almost exclusively on flesh. They claim the sheeps' heads that are thrown out from the slaughter-shed, and pick them perfectly clean, leaving nothing but the bones." And an eye-witness thus described the operation to Dr. Hector:—"Perching itself on the sheep's head or other offal, the bird proceeds to tear off the skin and flesh, devouring it piecemeal, after the manner of a Hawk; or at other times holding the object down with one foot, and with the other grasping the portion it was eating, after the ordinary fashion of Parrots." In Dr. Buller's work Mr. Potts has given a long and picturesque account of the bird's natural and acquired habits. Mr. De la Tour informed Mr. Wood that when the sheep, are assembled wounds resulting from the Kea's "vivisection" are often found on them, and not unfrequently the victims present an artificial anus—a fistulous opening into the intestine—in the right loin. The specimen exhibited was from a sheep that had been so attacked. It consisted of the lumbar vertebrae and the colon, showing the artificial anus between the iliac crest and the last rib on the right side—just in the place, that is, where modern surgeons perform the operation known to them as Amussat's; below the wound the intestine was contracted, while it was enlarged and hypertrophied above. The sheep was much wasted. The *modus operandi* was described as follows:—The birds, which are very bold and nearly as large as Rooks, single out the strongest sheep in the flock; one bird, settling on the sacrum, tears off the wool with its beak, and eats into the flesh till the bird falls from exhaustion and loss of blood. Sometimes the wound penetrates to the colon, when, if the animal recovers, this artificial anus is formed; it may be on the left, but is more frequently on the right side. It has been suggested that the bird aims at the colon in search of its vegetable contents; but the Kea's carnivorous appetite has been too frequently noticed to necessitate any such hypothesis. This strange phase of development through which the Kea has gone since the European colonization of New Zealand, and the consequent introduction of sheep to islands in which indigenous

mammals are almost unknown, by which it has come to prefer an animal to a vegetable diet, was first described in 1871 by Mr. T. H. Potts ('Nature,' vol. iv., p. 489); but it was reserved for Mr. De la Tour to discover the interesting result which Mr. Wood has just introduced to English naturalists.—HENRY T. WHARTON (39, St. George's Road, N.W.)

TWO SPECIES OF BIRDS LAYING IN THE SAME NEST.—There is ample evidence that the Partridge and the Pheasant will occasionally lay their eggs in the nest of another of their respective species (Yarrell's 'British Birds,' 2nd ed., pp. 312, 372): that the barn-door fowl is much addicted to the same cuckoo-like propensity (Waterton's 'Essays,' vol. i., p. 264): and that ducks (and especially the Eider duck) is apt to perpetrate the same vagaries (Rennie's 'Architecture of Birds,' p. 74): while the occasional habit of clubbing together for a joint nest on the part of other birds of the same species, such as Jackdaws and Long-tailed Tits, has been positively asserted by some (Zool., 1st ser., pp. 1775, 2567). Moreover, that the Partridge will sometimes lay her eggs in a Pheasant's nest, and the Guinea Hen in a Partridge's nest, has been authoritatively declared (Zool., 1st ser., pp. 186, 454), and I suppose we may assume with tolerable certainty that, under certain exceptional circumstances which we cannot fathom, such an unusual proceeding may be looked for among birds in general. Within little more than a twelvemonth two of these exceptional cases have been brought to my notice. The first occurred in June, 1878, when I was asked by the finder to examine an egg which he had taken from a Partridge's nest, but could not recognise, the said nest containing eight Partridge's eggs and five of these interlopers. There was not the smallest doubt in my mind, as soon as I saw it, that the strange egg was that of the Red-legged Partridge, and I should not have been at all surprised at the occurrence on the part of a gallinaceous bird, which seems in some degree addicted to such ways, but from the extreme rarity with which *Perdix rufa* occurs in this neighbourhood; for it is only as a rare straggler that this species is seen once in several years in this district. Now the fact that the eggs of *P. rufa* were found in the nest of *P. cinerea* is a plain proof that a hen bird of the former species had strayed into that locality, and yet I could not ascertain that a single specimen of that species had been seen before or after the eggs were found, though that some young Red-legged Partridges were hatched out I firmly believe, both because the egg brought to me contained an embryo chick within a very few days of hatching, and because my informant subsequently saw the fragments of shells near the nest, such as are usually seen after hatching. This is only another proof of that which I recognise more fully every day—what a very small portion in reality do we see and know of the birds and their habits with which we think ourselves so familiar! Not so remarkable, perhaps, in the eyes of some ornithologists, is my second

instance, which occurred last April, when a gentleman in this parish brought me an egg of the Kestrel and another of the Sparrowhawk, both taken from the same nest, to the considerable amazement of the finder. I say this may not so much astonish the ornithologist, who recollects that both species are apt to make use of the deserted nest of the Crow, and yet it is not, I think, by any means a common occurrence, and so I have deemed it worthy of record in the pages of 'The Zoologist.' At first I entertained the opinion that possibly the Sparrowhawk, whose eggs vary much in colour, might have laid one of abnormal colouring, even running into the exact hue of the Kestrel, just as the Blackbird will occasionally lay eggs closely resembling those of the Song Thrush, thereby proving the affinity of the several members of the genus *Turdus*. Indeed, one such egg of the Blackbird, taken by myself in this place, I forwarded many years since to Mr. Hewitson, who thought it worthy of a place in the last edition of his work; but then all the eggs in that nest were alike in colouring and marking. On further consideration, however, I do not think the Hawk's eggs in question can be referred to one and the same parent; there is no blending of one with the other, no partaking of the markings of both; but the colouring of the one egg proves it to be so unmistakably a Kestrel's, and that of the other no less pronounced a Sparrowhawk's, that I think two birds must each have laid an egg in the same nest. Possibly this may not be so rare an occurrence as I imagine; if so, I shall be glad to hear of further instances.—ALFRED CHARLES SMITH (Yatesbury Rectory, Calne).

A POMPEIAN BIRD SHOP.—A correspondent of 'The Times,' writing some time since from Pompeii, gives an interesting account of the excavations which are being carried on there, and amongst other curious discoveries, thus notices the ruins of a bird-dealer's shop, which had been brought to light:—"No sooner was the excavation of this chamber commenced than a number of bronze and terra-cotta vessels, bronze fibulæ, bracelets and rings, iron keys, kitchen utensils, and other articles of household use were found almost in a heap together near the door, and among them a considerable number of small earthenware pots, which I somewhat incredulously heard described as drinking cups for birds; but there soon followed abundant proof that this had been the shop of a seed merchant and seller of singing birds, and very little imagination was required to see the place as it was the day before the fatal eruption of 79. At first the room seemed to have been a mere receptacle for a miscellaneous collection of bronze and earthenware objects. There was no special character about it. The walls bore no traces of painting, but, as the clearing was continued, to the left of the door on entering, a heap of millet-seed was found, so carbonised that on taking up a handful it flowed between one's fingers, for every grain was separate and distinct. It was taken away in baskets full.

Close to this a quantity of hemp-seed, and of what appeared to be small beans in the same well-preserved condition, were found, and among them considerable fragments of the sacks in which they had been kept, the fibre and texture clearly distinguishable. Behind these heaps and against the wall more seed was dug out, mixed with heaps of carbonised wood, iron hinges and nails, and some iron hoops, evidently the remains of small barrels and bins which had been ranged on this side, while along the opposite wall a double row of terra-cotta ollæ for holding grain was gradually revealed. Suddenly there arose a cry, '*un ossa*,' '*un scheletro*,' and the excitement became intense; but the bones were small—at first they seemed mere fragments, and then the Director exclaimed, amid quickly following laughter, 'A chicken!' Here the filling in had become somewhat solidified, and as it broke apart a complete skeleton was revealed. It was that of a little singing bird, entirely embedded in the mass, and near it were fragments of other tiny bones. There could no longer be any doubt that the use of the little terra-cotta pots had been correctly described. It became clear why so many of them were found there, and that the number of plain bronze rings of about an inch and a half in diameter, and pieces of fine chainwork discovered, had been used for hanging birdcages. But what connexion had all those bronze vessels and ornaments near the door with a seed and bird-seller's shop? This also soon became evident. As the excavators continued farther into the room, great masses of carbonised beams of wood were found, each somewhat inclined downwards, and among them a quantity of fragments of intonaco and stucco wall-facing, coloured porphyry with a border of green and white. These were at once seen to be the remains of the floor of the room above with some of the plastering of its walls, and from the direction in which the beams were lying it was evident the floor had given way in the middle and towards the door of the shop below, precipitating the greater part of the contents of the upper room in that direction, the remainder falling towards the middle, and it was here the elegant long-stemmed candelabrum was found among the masses and fragments of carbonised wood. Did the worthy birdseller live above his shop? Did this candelabrum and the various bronze vases and other utensils form part of his domestic furniture? Who can tell?"

[In all probability the ground-floor only was occupied by the bird-dealer, while the floor above was perhaps tenanted by a dealer in candelabra and vases. One can hardly suppose that a bird-dealer could afford to own such works of art as were here discovered.—J. E. HARTING.]

SISKINS BREEDING IN CONFINEMENT.—It is now some ten years since I first tried to get Siskins to breed in confinement, and although, after many failures, I obtained nests of eggs, and occasionally young ones, it was only last year (1878) that I succeeded for the first time in rearing one out

of a nest of four. This year, acting on the experience I had gained, I placed a Chaffinch's nest—for which kind they had a decided preference—in an open wire nest-basket, such as are made for Canaries to build in, and which hook on to the wires of the cage. This is a matter of some importance, as the birds seem to take great delight in trimming and beautifying the outside of their nest—a fancy they could not indulge in if they had to build in a box or close basket. Having relined this nest with portions of others, and made it fit, the hen commenced laying a batch of five eggs on the 15th May, one being laid every day, but she began to sit as soon as the third egg was laid. I may here observe that as soon as the hen has seriously determined to build she continually utters a low plaintive note, heard at no other time of year, and then, and not till then, does she set to work in earnest. The cock takes no part in the construction of the nest, but is very attentive to his mate whilst she is sitting on her eggs; frequently bringing her food, which she receives, fluttering her wings and uttering the breeding notes. When the eggs were about to hatch I kept in the cage a plentiful supply of watercress and groundsel in jars of water, hard-boiled egg, sprays of millet (which had been frequently soaked in water for twenty-four hours), and gentles; these latter I obtained from Mr. Williams, of 10, Great Queen Street, Lincoln's-Inn Fields, where they can be purchased all the year round as bait for the use of anglers. On the morning of the 29th May three eggs were hatched, another on the following morning, and the fifth later on the same day. During the first eight or ten days the young ones were fed entirely on gentles, those in the pupa or chrysalis state being preferred; the other food was then gradually mixed with the gentles, which were used less and less, and were entirely discarded by the time the young ones were three weeks old. The food is first swallowed by the parent, and then ejected into the mouth of the young ones. I observed that a few grains of sand were generally taken with the food that was about to be given to the young ones. The young are born without any hair or down on them. They grow rapidly; their eyes are open on the sixth day; the stumps of the feathers begin to appear on the seventh or eighth, and they leave the nest fully feathered when they are fifteen days old, and a few days later are able to feed themselves. Care must be taken not to let them have any hard seed till they are about six weeks old; the soaked seed may then be gradually withdrawn and replaced with ordinary seed. When my young birds were seven days old, the cock—who till then had never fed them—commenced taking charge of them, and the hen began to evince a desire to nest again, pulling pieces out of the nest in which her young were, wherewith to build a new one. I therefore supplied her with another, in which, after due alterations, she laid five eggs. These, however, did not hatch, the first being laid on the 10th June and the last on the 15th—that is, in six days. The three young ones which were hatched first were strong,

healthy birds, but the other two were weakly; one died in a few days, and the other, though sickly, lived to the age of three weeks. It was interesting to see how carefully the sickly one was tended by its mother, who would wait till the clamour of the others had subsided, and then, gently touching it with her beak as a signal for it to open its mouth, would feed it before its more vigorous brethren could thrust their ever hungry mouths in the way. Even when the others had been handed over to the charge of the cock she continued to feed this little one, frequently leaving her eggs for the purpose. In general appearance and call-note the young bear a strong resemblance to young Chaffinches. The colour of the feet and legs of the wild Siskin, both young and old, is dark brown; but, as is the case with some other Finches,—Goldfinches and Bramblings, for instance,—they become quite pale after moulting in confinement. Hence the term "white-legged" birds amongst dealers, signifying birds that have been caged some time. The feet and legs of my young birds were, however, always pale. The beak of the wild Siskin, when young, is always dark, nearly black, though it becomes lighter in the adult, but in my young ones the beaks were always pale. Three birds were reared, but one fell a prey to a cat; the remaining two, both of which are cocks, have nearly assumed the adult plumage. Moulting is a tedious process with caged Siskins, and they suffer a certain amount of pain. Not so, however, with the young ones; they moult rapidly and well, and suffer so little inconvenience that they are in song the whole time. I have never bred Bramblings, but I have little doubt that they would require similar treatment.—J. YOUNG (5, Denbigh Road, Notting Hill).

NESTING OF THE WOODCOCK.—I read with much pleasure the interesting essay on the habits of the Woodcock (Zool. 1879, p. 433); but, nevertheless, felt somewhat surprised to find that the fact of this species breeding in England is not more generally known than it would appear to be from Mr. Harting's remarks. While we were residing in Oxfordshire, now twenty-five years ago, Woodcocks's nests were frequently found in that part of the kingdom. When I say frequently, I do not mean that Woodcocks' nests were common, but that few years passed by in which a Woodcock's nest was not discovered in one or another of the great woods of Oxfordshire and the adjacent counties. In the Midland district such occurrences are still more frequent; and in Sherwood Forest, where, in the company of my brother, I have spent many very interesting and happy days, the nests of Woodcocks may almost be said to abound. There this species annually breeds in great numbers, and during the spring and summer months, as soon as evening approaches—even before the sun has set—Woodcocks may constantly be seen flying in pairs just above the tops of the multitudinous oak trees. Indeed it is not unusual to see two or three pairs at the same time flying round the trees, and occasionally indulging in graceful evolutions

in the full enjoyment of their evening flight. While thus engaged they sometimes utter a very faint cry, slightly resembling the cry of the Snipe, but more musical. Our visits to the forest have sometimes taken place during the summer months, after the young birds had left the nest; but on rare occasions, in the month of April—the earliest period at which we have ever been there—we have disturbed Woodcocks by accidentally approaching their nest, and seen them run in a shuffling manner for a few yards, and then take a short flight and settle again. At such times we invariably withdrew to a greater distance. It may perhaps be asked, why we did not pursue the investigation? but for many reasons I think the course we adopted was the wisest, and certainly the most considerate. If we had examined the eggs or young birds ever so accurately we should have gained no fresh information on a subject already so well known, but should only have wasted time of much importance to our entomological pursuits, and in addition to this should have broken our promise to the keepers, that we would in every way avoid disturbing the game. Indeed this is a point that I would most strongly urge on all who visit Sherwood. Since the noble proprietors of the last remnants of the forest have so kindly instructed their gamekeepers not to interfere with anyone who is honestly in pursuit of Natural History, the very least that naturalists can do in return for such liberality is to abstain from penetrating the thickets and scaring their inhabitants, most especially during the breeding season. The brood of Woodcocks in Sherwood Forest is of no small consequence to the game-list. I have myself been told by one of the keepers that he has known as many as 120 Woodcocks bagged in one day by only six guns, and that at all shooting parties these birds form an important item in the day's sport. Let all naturalists bear this in mind, and, without some better reason than finding a Woodcock's nest, confine their rambles to the more open glades of the forest. Our visits to Sherwood very seldom took place before the latter part of May, at which time young Woodcocks would be able to shift for themselves. Nevertheless I remember once having observed a Woodcock carrying, as we thought, something in its feet; but the daylight was failing at the time, and we fancied that we might have been deceived. In Sherwood Forest it would be unnecessary for the parent birds to transport their young to any distance in search of food. The whole surface of the ground in the thickets is covered with decaying leaves, in the hollow places often to a great depth, and among these leaves worms and other small animals abound in countless numbers. These are the proper food of the Woodcock, and the idea that Woodcocks and Snipes live by suction is, as Mr. Harting observes, a simple absurdity. The mistake doubtless arose from the fact that, in search of food, these birds will often plunge their long bills up to their eyes into soft ground. I have often seen spots positively honeycombed by their borings; but the true object of this is to find worms,

and not to suck out the moisture. Their bills are specially adapted to this purpose; besides the fact that the upper mandible is produced into a solid point which overlaps the end of the lower mandible to facilitate the operation of boring, these birds possess the power of opening at will the extremity of the bill while the rest of that organ remains tightly closed. The extremity of the bill is also for some length tender and sensitive on the outer surface, and can therefore both feel the worms and capture them with every function of a finger and thumb. Anyone may convince himself of the truth of this by holding the bill of a Snipe just killed tightly closed with one hand, while with the other hand he presses the muscles at the base of the hinder part of the skull; he will then see the extremity of the bill open sufficiently to capture a worm or any such animal. In a very few hours after death the muscles become rigid and the point of the bill hard and shrivelled, and this power of action is lost. I cannot think that Woodcocks have more frequently remained to breed in this country of late years than they used to do in former times. Indeed my own experience would lead me to suppose that in point of numbers the species has become much scarcer; and I quite agree with the opinion of Sir W. Jardine, quoted by Mr. Harting, that the fact of a greater number of their nests having been discovered is owing to the increase of ornithologists rather than Woodcocks.—A. MATTHEWS (Gumley, Leicestershire).

WOODCOCK CARRYING ITS YOUNG.—I have read your article on the Woodcock (Zool. 1879, p. 433). Although I have seen the bird carrying its young, I never observed any daylight between the legs. As the bird flies away, the hind quarters droop, and it looks more like a huge wasp or hornet than anything else. I am no draughtsman, but I send you a rough outline of what I have seen. The tail and hind portion drooped even more than in my sketch. I could never make out the feet and legs, and realize the exact mode of grip. The small Woodcock in the distance, in your plate, is like the thing, if the tail were depressed a bit.—J. DUNBAR BRANDER (Pitgaveny, Elgin, N.B.).

MIGRATION OF WOODCOCKS AND SNIPE.—Towards the end of November I went to shoot in a large cover, celebrated for Woodcocks, near here, and where, the previous week, eight had been seen. The day I speak of was cold, with snow—no frost—and we did not see one. My friend and I remarked that this was ominous of cold weather. The next day the frost set in, and I have no doubt the Woodcocks' instinct had advised them to quit their quarters. In 1878 I remember seeing a great many Snipe flying round and round in circles over a meadow, no doubt preparing to migrate; for, a few days after, severe weather set in. We have had no Fieldfares, and but few Redwings, either this winter or last. Did their instinct lead them further west or south at the autumn migration?—W. J. TOMLINSON (The Woodlands, Burton-on-Trent).

WHITE-FRONTED GOOSE IN NORTHAMPTONSHIRE.—I received on the 10th January a very fine adult specimen of the White-fronted Goose, *Anser albifrons*, from my friend Mr. G. E. Hunt, who shot it on the 6th of the same month, in one of my meadows on the River Nen near Aldwinkle, Northamptonshire. I see in a late number of 'The Field' that two others of the above species are recorded by Mr. Tomalin as having been shot in our county—one near Northampton, and the other near Wellingborough, in the first week of January. Five and twenty years ago I should have hardly considered such occurrences worthy of record in 'The Zoologist,' as the White-fronted, though less common than the Bean and Pink-footed Goose, was by no means, at that period, an exceedingly rare bird; but now, instead of the hundreds of various species of wild geese which used to visit the valley of the Nen in the winter months, many seasons pass without my hearing of more than perhaps half a dozen passing over our district.—LILFORD (1, Grosvenor Square, W.).

SCARCITY OF GOLDEN PLOVER IN SOUTH OF SCOTLAND.—I have just read with interest the remarks of Mr. Cordeaux (pp. 14, 15) upon the wonderfully large flock of Golden Plover which he saw in Lincolnshire at the commencement of the severe frost at the beginning of last December; and I see that he further mentions having scarcely seen a single bird of this species previously during the autumn. Judging from my own observations in the South of Scotland this autumn and winter, I can state that the movements of Golden and also of Green Plover have been very remarkable and have puzzled the sportsmen of Dumfriesshire, Ayr, and Galloway very considerably. In most years there are plenty of both these Plovers in certain likely haunts in all these counties; but on most of the properties on which I shot last autumn, there were scarcely any of these birds in places and at times where, during ordinary years, there were quantities. This was equally the case upon the sea-shores of the south-west of Scotland, as in the marshy grounds bordering the rivers, and upon the lower-lying moors, where often we see large "stands" of Plover in September and October. Shooting in Dumfriesshire from November 20th to December 15th last, on a large estate of some twenty miles in length and as many in breadth, where during hard frost the Golden Plovers in other years were almost countless, I only met with one flock during the above time, and only saw these on one day, and I may add that the frost was not very much harder than in previous years. Many friends, who have shot for years in the counties I have mentioned, told me that it was observable what a great decrease, or rather an almost fatal scarcity, of Golden Plovers had taken place this winter, and this was especially the case in their most favourite haunts. I hear of a similar noticeable scarcity of these birds from various parts of the North of Scotland, and also from the northern coast of Ireland.

I think, therefore, that there must have been a very universal migratory movement of Plovers from north to south this winter, which will account for the large flocks at present on the south coasts of England and Ireland; and no doubt Mr. Cordeaux's immense flock was composed of Scotch birds *en route* to the south.—ALEXANDER CLARK KENNEDY (late Captain Coldstream Guards).

THE BLUE THRUSH ERRONEOUSLY RECORDED AS A STRAGGLER TO IRELAND.—The Blue Thrush (*Monticola cyanus*), first announced by Mr. Blake-Knox, in 'The Zoologist' (1870, p. 2019), as having been killed in Ireland, and noticed as such both in Messrs. Sharpe and Dresser's 'Birds of Europe' and in Prof. Newton's edition of Yarrell (vol. i., p. 295), has no claim, so far as our specimen is concerned, to be enrolled in the British Fauna. The specimen purchased for the Museum of the Royal Dublin Society, in November, 1866, was at that time supposed to have been shot in the county of Meath by a Mr. Brassington: but, after many enquiries, and the best assistance given by Mr. Glennon, and a long correspondence in all likely quarters, nothing more could be traced of its history. It was by a mere accident that the bird was, many years afterwards, recognised by my friend Dr. Battersby, of Lough Carragh, who expressed great surprise to see it in the Irish collection. Dr. Battersby then told me that he had himself brought this Blue Thrush, fresh-killed, from Cannes, where he was then residing; and when passing through Dublin had left it, during Mr. Glennon's absence, at his shop for a present. Dr. Battersby's name was no doubt imperfectly remembered by the shopman, and the bird, being fresh-killed, was too hastily assumed to be Irish. The locality, Meath, may have suggested itself as being the county in which many families of the name of Battersby reside. Dr. Battersby finds, from a memorandum, that he arrived in Dublin on the 14th November, 1866, and returned to Cannes on the 21st, a date which is consistent with Mr. Glennon's having received the bird on the 17th. No blame in the matter can attach to any of the parties concerned; it was a very natural mistake to make, and I feel much pleasure in being able so conclusively to explain the very unusual and perplexing circumstances of its history.—A. G. MORE (Science and Art Museum, Dublin).

[On turning to the page above indicated of Prof. Newton's edition of Yarrell's 'British Birds,' we find that although he notices Mr. Blake-Knox's report of the supposed occurrence of this bird in Ireland (as indeed he could hardly avoid doing) he by no means gives implicit credence to the report. On the contrary, he states that "the southern range of this species, even though it has occurred as a straggler in Heligoland, seems to render its enrolment as a 'British' bird inexpedient." We are glad to have the question now definitely settled.—ED.]

WHITE'S THRUSH NEAR WHITBY.—In the latter part of November, 1878, I received a Thrush which I could not make out or find described in any book on birds then accessible to me. It looked not unlike a young Missel Thrush, but its greater length and other peculiarities, such as the possession of fourteen tail-feathers, precluded its identification with that species. I have since shown it to one or two ornithologists, and your opinion, based on the description which I sent you, leaves me no longer in doubt that the bird is White's Thrush, *Turdus varius* of Pallas. It had killed itself by coming in contact with a telegraph wire, and had displaced and injured several of the neck feathers, but was otherwise in good condition. It has been preserved for the Museum here, and forms an interesting addition to our collection of county birds.—MARTIN SIMPSON (The Museum, Whitby).

[It will be in the recollection of our readers that a specimen of White's Thrush was procured at Hardacres, Berwickshire, in December, 1878, within a month of the capture of the one above-mentioned (Zool. 1879, p. 133). Possibly, therefore, these two birds may have travelled to this country in company.—ED.]

GOOSANDER ON THE EXE.—An adult male *Mergus merganser*, Linn., was shot on the river, near Countess Weir, on the 10th inst. This is an extremely rare bird in the western counties in adult plumage. We have in this Museum a fine old male, shot near Exeter, about 1840, from the collection of Mr. Robert Cumming, but that and the present specimen are the only adult examples I know of as having occurred in Devonshire. Immature specimens occur now and then in severe winters. I obtained a young male in 1856, and others have occurred in the neighbourhood at long intervals. It is unfortunate that the beautiful buff or salmon colour of the plumage of the under parts of the adult male, together with the carmine of the bill, and the rich orange of the legs and feet, disappear in stuffed specimens. The breast and belly become quite white after a time. The present specimen had hardly completed its moult, many of the feathers still retaining a portion of the sheaths. The bony labyrinth of the wind-pipe is well developed.—W. S. M. D'URBAN (Albert Memorial Museum, Exeter).

SNOW BUNTING, SPOTTED CRAKE, AND BITTERN AT LEISTON.—On the 11th November last I met with a rather large flock of Snow Buntings, on a barley stubble near here, about six miles from the sea. These birds are, I believe, seldom seen in this neighbourhood, except on the coast, where they are pretty regular winter visitors. Two Spotted Crakes were flushed by some snipe-shooters from a large piece of reeds at Leiston, last November, one of which was killed. On the 27th December my brother flushed a Bittern from some reeds near the sea-wall at Leiston; it rose close to his

feet. One of these birds was shot in a reed-bed near this spot about twenty years ago.—G. T. ROPE (Blaxhall, Suffolk).

SHORE BIRDS IN EAST- AND MID-LOTHIAN.—During the month of October the Firth of Forth was visited by large numbers of the Pomatorhine Skua. The flocks, indeed, in some cases, seem to have quite equalled in numbers those reported to have been seen off Redcar and other parts of the English coast. On the 25th I saw many specimens in the neighbourhood of North Berwick, and was fortunate enough to shoot two. Neither of my birds had the long tail-feathers. I have since seen others of these birds procured at Musselburgh and at Queensferry. Buffon's Skua also appeared in small numbers. A specimen was shot on October 20th near Drum, East Lothian, and a few days later another was picked up in a dying state on the shore between Portobello and Leith. Towards the end of October a Great Shearwater, *Puffinus major*, was shot by a fisherman near North Berwick. This bird was lately exhibited at a meeting of the Royal Physical Society of Edinburgh. I have also seen a Fulmar Petrel which was shot at Portobello on November 27th, and a Sclavonian Grebe lately procured near Prestonpans.—C. CHAMBERS (339, High Street, Edinburgh).

RARE BIRDS AT HARWICH.—On the 10th, 12th and 22nd November three Richardson's Skuas were shot, one mature and two immature, and another mature bird was seen. On December 3rd three White-fronted Geese were seen, and two shot—a fine old gander and an immature bird. On the 5th a Hen Harrier was shot; it had just struck down a Black-headed Gull that was teasing it, killing it dead. The Harrier did not attempt to follow the Gull to the ground, and it was picked up by a man who then shot the Harrier. Three more were seen. On the 8th a Whooper was shot in the harbour. A good many Swans have been seen here this severe weather.—F. KERRY (Harwich).

BIRDS AND THE WEATHER—The severe weather and excessive frosts which ushered in winter in the West of England have borne out a fact with reference to bird-life which may be worth recording, and that is, that no visitation of exceptionally hard weather is altogether uniform in its effects upon the feathered race. Snow has been present in more or less quantities in most parts of the kingdom, while it has been absent in West Somerset; and it is owing to this that, while we have had many birds among us in unusual numbers, such as Snipe and Woodcock, which have been driven from the snow-covered districts, we have been without those large flocks of Fieldfares and migrating Wood Pigeons which last year accompanied the heavy falls of snow. A peculiarity of the present winter with us is the almost total absence of the Fieldfare. Up to the present time I have only noticed three, and amongst the bunches of birds exposed for sale I have not detected one. The hard weather has sent a few Merlins into this district.

I saw one yesterday being bullied by a Rook; and an adult male was killed in one of the Taunton streets. The only variety which the winter has, to my knowledge produced up to this time in the West is a fine Spoonbill, which, towards the end of November, was obtained in the Northam Burrows, in North Devon—a locality where examples of this bird have been secured on several previous occasions.—MURRAY A. MATHEW (Bishop's Lydeard).

PEREGRINE FALCON NEAR WINDSOR.—On November 5th I received for preservation a Peregrine Falcon which was shot at Old Windsor, flying in a south-westerly direction. It is in mature plumage, but not having the grey back of the old male bird. I think it may be a bird some of your friends have lost, as there is a mark on the left leg just above the foot, as if rubbed by a leather strap. The tips of the tail-feathers are slightly worn.—E. CURTIS (Thames Street, Windsor).

SINGING POWERS OF THE GREAT GREY SHRIKE.—On December 6th a Great Grey Shrike was shot. When I first saw the bird, it was sitting on the telegraph-wires, from which it was disturbed by a passing train. I then went in search of it, and heard what to me was a strange warbling song, quite a combination of other birds' notes, followed at intervals by its own. I at once knew it was the bird I was searching for, and shot it.—F. KERRY (Harwich).

AMERICAN GREEN-WINGED TEAL IN DEVON.—My brother, Mr. R. P. Nicholls, purchased from a gunner, on November 23rd, a male specimen of *Querquedula carolinensis*, which he had just shot from an arm of the Kingsbridge Estuary. Although this bird closely resembles the European *Crecca*, Dr. Elliot Coues distinguishes them as follows:—"English Teal (*Crecca*).—No white crescent in front of the wing; long scapulars black externally, creamy internally. American Teal (*Carolinensis*).—A conspicuous white crescent on the side of the body, just in front of the bend of the wing; scapulars plain." This bird agrees in every particular with *Carolinensis*, as above described, as also with American skins, with which I have compared it. I am not aware if it has been before noticed to have occurred in Great Britain. Baird, in his 'North American Birds,' states it to be accidental in Europe.—HENRY NICHOLLS (Roseland, Kingsbridge, South Devon).

[In addition to the distinguishing characters above pointed out, we may add that the American species differs from the European bird in wanting the white streak which extends from the bill over the eye in the latter; and the white line below the eye is also nearly absent, being very indistinctly marked.—ED.]

AMERICAN GREEN-WINGED TEAL IN HAMPSHIRE.—Observing from a note in 'The Field' that a specimen of the American Green winged Teal was lately killed in South Devon, I am induced to record the fact that

I have in my possession one of these birds in excellent preservation, which was shot by my father more than forty years ago at Hurstbourne Park, Hants. The white crescent on the wing is very apparent and well defined.—ARTHUR FELLOWES (Burwood, Rotherfield, Sussex).

SCARCITY OF FIELDFARES.—The Fieldfare has scarcely put in an appearance here this season. Not more than four or five have been seen at any one time, and certainly not more than a dozen birds have come under my notice throughout the winter. It is the more remarkable as there has been a superabundance of haws and other hedge-fruit. Thrushes and Blackbirds have been numerous as usual, and Redwings in extraordinary numbers.—J. KING (Langford Road, Biggleswade).

UNUSUAL MIGRATION OF JAYS.—One day during the last week of October last the inhabitants of the little bay of St. Margaret's were startled by the sudden appearance of a flock of between two and three hundred Jays, which rested for awhile in the vicinity, and then dispersed inland. No doubt the extreme cold then prevailing in the East of Europe was the cause of their immigration.—ARTHUR W. CRICHTON (26, East Cliff, Dover).

THREE-LEGGED MAGPIE.—On November 3rd Mr. Myers, of Po House, Silecroft, Cumberland, shot a Magpie with three legs. The third leg, which is perfectly formed, is smaller than the others, and grows close to what may be styled the right leg, and is white in colour, as are also the claws.—CHARLES A. PARKER (Gosforth, Carnforth).

LATE NESTING OF THE BARN OWL AND WATERHEN IN NORFOLK.—As a proof of the lateness of the past nesting season, I saw two nestling Barn Owls on November 21st, which had been taken out of Ryburgh Church tower. I could not exactly say how old they might be, but they were evidently very young. The same week—viz., on the 26th—when shooting near Holt, I saw a half-grown Waterhen, only able to fly a yard or two.—J. H. GURNEY, Jun. (Northrepps, Norwich).

LITTLE GULL, FULMAR PETREL, AVOCET AND SHEARWATERS.—I beg to record the occurrence, during the past autumn, of the following birds:—September 3rd, *Larus minutus*, immature, given me by a friend; shot at Scarborough. October 11th, *Fulmarus glacialis*, fine mature specimen, obtained from a local birdstuffer; shot off the coast of Hull. November 3rd, *Recurvirostra avocetta*, female, weight fourteen ounces; shot at Stornoway. December 11th, *Larus glaucus*, immature; shot off the coast near Hull. *Lestris parasiticus* and *pomatorhinus*, many of the former have lately been received by the birdstuffers of Birmingham, but only one or two of the latter; I know of about fifteen specimens in all.—ROBERT W. CHASE (Birchfield, near Birmingham).

MARTINS IN DECEMBER.—On the 18th and 19th November last, the afternoon being warm and bright, I saw a Swallow flying about the College grounds. I watched it for some time on both occasions, so am quite sure I was not mistaken. This is not the latest stay of Hirundines that I can remember. On December 3rd, 1873, a remarkably warm day, I saw three Martins flying about in the grounds of St. John's College, Cambridge. What would probably happen in cases like this? Do the birds migrate or do they linger on till cut off by the cold?—M. VAUGHAN (Haileybury College, Hertford).

[They probably perish for want of food.—ED.]

NORTHERN STONE CRAB.—I have recently received for the Royal Aquarium several consignments of the Northern Stone Crab, *Lithodes arctica*, from the Northumberland coast, where it occurs not infrequently. Both sexes are represented, and may easily be defined by the curious arrangement of the abdominal segments of the female. Most of the females are now carrying their ova, which appears to be well developed. I shall be glad to communicate with any student of Marine Zoology, for I frequently have duplicate fresh specimens which might be useful, and which are dead on arrival from the coast.—JOHN T. CARRINGTON (Royal Aquarium).

KNOTTY CUSHION STARFISH.—Mr. E. Howard Birchall, of the Tyne-mouth Aquarium, has forwarded to me, for this Aquarium, about a dozen very beautiful examples of the Knotty Cushion Starfish (*Goniaster equestris*), taken off the Northumberland coast. The late Prof. Edward Forbes, in his 'History of British Starfishes,' describes this species as "one of the rarest and most beautiful of our Starfishes." The specimens sent by Mr. Birchall are pretty even in size, and from six to eight inches in diameter. They are of a rich orange-red colour; but I fear that none of the specimens are sufficiently "strong alive" to hope for their recovery after their long journey from Shields to London.—JOHN T. CARRINGTON (Royal Aquarium, Westminster).

EPPING FOREST AND COUNTY OF ESSEX NATURALISTS' FIELD CLUB.—A meeting for the foundation of this Association, the objects of which had been made known by advertisements and circulars, was held on the 10th January, in the rooms of the Art Classes, at Buckhurst Hill, Mr. R. Meldola, Secretary to the Entomological Society of London, in the chair. A resolution to found the Club was proposed by Mr. N. F. Robarts, seconded by Mr. W. C. Barnes, and carried unanimously. Draft rules, carefully drawn up by Mr. C. Browne, M.A., barrister-at-law, to meet the objects of the promoters,

were then read and discussed. The principal points are as follows:—The Club is established for the study and investigation of the Natural History, Geology, and Archæology of the County of Essex, special attention being given to the Fauna, Flora, Geology, and Antiquities of Epping Forest; the publication of the results of such investigations; the formation of a museum and of a library of works of local interest and other publications; and the diffusion of information on natural science and antiquities. Members' subscription (both for ladies and gentlemen) was fixed, after considerable discussion, at 10s. 6d. per annum, members living beyond a radius of fifteen miles from the head-quarters to pay 7s. 6d. annually. Persons joining the club within two calendar months from its formation to be considered original members. In addition to the ordinary meetings of the club it was agreed to hold field meetings in different parts of the county, at the discretion of the Council, who may appoint lecturers and make such arrangements as they may deem best for the convenience of members and friends. An important rule, which met with much approval, runs as follows:—"The Club shall strongly discourage the practice of removing rare plants from the localities where they are to be found or of which they are characteristic, and of risking the extermination of birds and other animals by wanton persecution; and shall use its influence with landowners and others for the protection of the same, and to dispel the prejudices which are leading to their destruction. The rarer botanical specimens collected at the field meetings shall be such as can be gathered without disturbing the roots of the plants; and notes of the habits of birds shall be recorded instead of collecting specimens or eggs." This rule is not intended to restrict the judicious collecting of specimens necessary for their studies by individual members. The rules having been passed and ordered to be printed, the meeting proceeded to elect as officers—President, Mr. Raphael Meldola; Treasurer, Mr. H. J. Barnes; Secretary, Mr. William Cole; Librarian, Mr. W. J. Argent. The following gentlemen were chosen to form the Council of twenty-five members:—Dr. E. B. Aveling, R. L. Barnes, W. C. Barnes, E. N. Buxton, John T. Carrington (Naturalist to the Royal Aquarium, Westminster, and Editor of 'The Entomologist'), R. M. Christy, P. Copland, E. A. Fitch, Rev. James Francis, G. J. Godwin, Herbert Goss, J. C. Harcourt, Francis George Heath, H. B. Hooper, J. P. Hoare (Author of a 'History of Epping Forest'), Andrew Johnston (Verderer of Epping Forest), Alfred Lockyer, Nathaniel Powell, Hildebrand Ramsden, M.A., Rev. C. J. Ridgeway, N. F. Roberts, W. G. Smith (Hon. Sec. Epping Forest Fund), C. E. Taylor, Rev. W. Linton Wilson, M.A., T. J. Woodrow. In the list of original members were Prof. C. C. Babington, Col. Makins, M.P., H. T. Stainton, Frank Crisp (Secretary Royal Microscopical Society), Arthur Lister, J. W. Dunning, M.A., W. Fowler, Frederick Young (Chairman of Epping Forest Fund), J. Eliot Howard, Mrs. Barclay, David Howard

(Walthamstow), F. W. Cooper, Ferdinand Grut (Librarian Entomological Society), &c. Many other literary and scientific men of eminence have also promised aid in various ways. At the close of the meeting, the Secretary requested all intending members to send their names to him at once, at Laurel Cottage, Buckhurst Hill.

PROCEEDINGS OF SCIENTIFIC SOCIETIES.

LINNEAN SOCIETY OF LONDON.

December 18, 1879.—Prof. ALLMAN, F.R.S., President, in the chair.

Mr. H. Seebohm was elected a Fellow of the Society. Three Associates were also balloted for and elected, *viz.*, Messrs. A. D. Bartlett (Superintendent Zoological Gardens), N. E. Brown (Kew Herbarium), and F. H. Waterhouse (Librarian Zoological Society).

Professor Allman gave a notice of some researches in connection with what appeared to him to be true sense organs in the Hydroids. He drew attention to the fact of his having some years ago (Phil. Trans. 1875) described the occurrence in *Myriothele* of certain remarkable pedunculated sacs which are found in the spherical capitulum of the tentacles, where they are in connection with a bulbous mass composed of radiating filaments. These filaments admit of a comparison with the rod-like bodies characteristic of special sense organs in higher animals; and the whole structure was believed by the author to represent in *Myriothele* an apparatus of special sense. For these pedunculated sacs Prof. Allman proposes the designation of "Podocysts," and he now believes that in more or less modified forms they are more widely distributed among the *Hydroidea* than he had supposed when he described them in *Myriothele*. He would refer to the same group of bodies the pedunculated thread cell-like sacs which in the form of four pencils terminate the four lobes which surround the mouth of the planoblast in *Podocoryne* (see 'Gymnoblasic Hydroids,' pl. xvi, figs. 6, 7). Here, however, instead of being immersed in the surrounding tissues, they stand out free from the surface and are bathed on all sides by the water. Each sac is furnished with a minute terminal style, as in *Myriothele*. Whether the very singular pedunculated sacs with which the tentacles are armed in the planoblast of *Gemmaria* (Hydroids, Ray Soc., pl. vii, figs. 3, 4) must be placed in the same general category with the "podocysts" of *Myriothele* is not at present so evident. Instead of containing, as in the latter, a single thread-cell-like body, the sacs of *Gemmaria* enclose several oval capsules, while the terminal style of the podocyst of *Myriothele* is here replaced by a pencil of long vibratile cilia. The peduncle of the sac, moreover, is in *Gemmaria* eminently contractile, at one time extending itself to a great

length, and again becoming so much shortened as to bring the sac which it carries on its summit almost in contact with the tentacle of the planoblast. Notwithstanding, however, these differences, the correspondence is still so close as to suggest a similar significance.

A paper was read by the Rev. J. M. Crombie "On the Lichens of Dillenius ('Historia Muscorum'), as illustrated by his Herbarium;" and other subjects of botanical interest were brought forward.—J. MURIE.

ZOOLOGICAL SOCIETY OF LONDON.

December 16, 1879.—Prof. FLOWER, LL.D., F.R.S., President, in the chair.

The Secretary read a report on the additions that had been made to the Society's Menagerie during the month of November, amongst which special attention was called to a fine example of the King Penguin, *Aptenodytes Pennanti*, purchased November 14th.

Mr. H. Seebohm exhibited, and made remarks on, a collection of birds made by Captain the Hon. G. C. Napier, in the Valley of the Atreck, near the south-east corner of the Caspian Sea.

Mr. R. G. Wardlaw Ramsay exhibited a specimen of *Pericrocotus flammeus*, in an abnormal state of plumage, obtained on the Neilgherry Hills in Southern India.

Mr. Sclater exhibited a small collection of birds from the island of Montserrat, West Indies, received from Mr. J. E. Sturge, of that island. This collection, though small, was of much interest, as nothing was previously known of the Ornithology of Montserrat.

Mr. T. Jeffrey Parker read a paper on the intestinal spiral valve in the genus *Raia*. Mr. Parker showed that there were four types of valve exhibited in individuals of that genus, differing from one another in morphological characters, in the extent of absorption surface presented to the food, and in the resistance offered to the passage of food.

A communication was read from the Marquis de Folin "On the Mollusca of the 'Challenger' Expedition of the genera *Parastrophia*, *Watsonia* and *Cæcum*."

Prof. W. H. Flower read a communication on the cæcum of the Red Wolf, *Canis jubatus*, in which it was shown that that animal differed from the majority of the *Canidæ* in possessing a very short and perfectly straight cæcum.

A communication was read from Mr. Edward Bartlett, containing a list of the mammals and birds collected by Mr. Thomas Waters in South-East Betsileo, Madagascar. The collection contained a new species of rodent belonging to the genus *Nesomys*, and two new species of birds of the genera *Cypselus* and *Zapornia*.

Dr. A. Günther read the description of a new species of dwarf Antelope, obtained by Dr. Kirk near Brava in the South Somali country. Dr. Günther proposed for this new species the name of *Neotragus Kirki*.

A communication was read from Mr. Martin Jacoby, containing the description of new species of Phytophagous Coleoptera.

A communication was read from Prof. J. Reay Greene, on a remarkable Medusa, *Charybdea haplonema*, from Santa Catharina, Brazil.

Mr. Edward R. Alston read a description of a skull of a Chamois with four horns, which had been exhibited at a previous meeting of the Society.

Mr. Henry Seebohm read a paper "On certain obscure Species of Siberian, Indian and Chinese Thrushes.—P. L. SCLATER, *Secretary*.

NOTICES OF NEW BOOKS.

Biologia Centrali-Americana. Edited by F. D. GODMAN and OSBERT SALVIN. 4to. London: published by the Authors.

UNDER this title Messrs. Godman and Salvin have commenced the publication of a series of quarto volumes upon the Fauna and Flora of Mexico and Central America—*i. e.*, the whole of Mexico from the valleys of the Rio Grande and Gila on the north, the five Central-American States of Guatemala, Honduras, San Salvador, Nicaragua, and Costa Rica, British Honduras, and the Colombian State of Panama as far south as the Isthmus of Darien. During the past twenty-two years the Editors have been collecting materials for this work. They have themselves visited parts of the country, and spent several years there; and during the whole of the above period they have received collections from correspondents, and from naturalists specially employed in visiting many of the previously unexplored districts. The materials thus obtained have been partly retained by the Editors in their own collection, and partly so distributed as to be most readily available for the present work. In addition to these materials, the Editors propose that all specimens obtained by other travellers should be examined, wherever they may be accessible, so as to make the work as complete a record as possible of what is known of the animal and vegetable life of the country under investigation.

We learn from a Prospectus of the work that it will be issued in zoological and botanical parts, each containing an average of

six plates. Those relating to Zoology will contain portions of several subjects. The botanical parts will contain no other subject. It is believed that the work will extend to about twelve volumes of 500 pages each, of Zoology, and twenty parts of Botany.

Two parts of this work have already appeared. In Part I. the Monkeys of Central America, of which there are said to be at least eleven species, are described by Mr. Alston, and two of them, *Mycetes villosus* and *Chrysothrix oerstedii*, are figured. Mr. Alston also contributes the first instalment of an account of the Bats of the region in question, the conclusion of which appears in Part II., with two plates. Messrs. Godman and Salvin, undertaking the Birds, have commenced in Part I. with the order *Passeres*, suborder *Oscines*, and begin their long list with the Thrushes, figuring three species; and in Part II. a fourth, *Turdus nigrescens*, which looks uncommonly like our old friend the Blackbird. The sexes, however, of this species are said to present scarcely any difference in plumage.

In the class Insects, Part I. contains an instalment on the *Rhopalocera*, which is continued in Part II., with, altogether, four beautifully drawn plates.

Mr. W. H. Bates, in Part II., commences the *Coleoptera*, and two plates are given of the species described by him.

Hitherto a knowledge of the fauna of Central America has been possessed only by the few who have specially directed their attention towards this zoologically rich subregion. The general public, and indeed the majority of naturalists, may be said to know little or nothing on the subject, for they have had no means of information beyond the scattered papers which have appeared at intervals in the 'Proceedings of the Zoological Society' (chiefly lists of species collected, with the collector's notes appended), and these have only served to show what a wonderfully rich field awaited exploration by naturalists, and how much a comprehensive work on the fauna and flora of such a country was needed. This desideratum is at length to be supplied, and in a most satisfactory manner, if we may judge by the first two parts which have been issued of the work now in progress. The undertaking is a most onerous one, involving an amount of personal labour, and a sacrifice of time, trouble, and expenditure, which none but the most enthusiastic naturalists,

having the interests of science alone at heart, would care or consent to bestow. We trust that the authors will receive that hearty support which they have a right to expect from those for whose benefit they are so laboriously and so generously working.

The Ascent of the Matterhorn. By EDWARD WHYMPER. With Maps and Illustrations. London: Murray. 1880.

If a description of Nature in one of her wildest and grandest moods comes fairly within the term Natural History, then is Mr. Whymper's new book entitled to a notice in these pages. On looking through the volume, however, it is apparent that the author's object was not to investigate the fauna of the Alps, and indeed had it been so he would have been but poorly repaid for his toil, seeing how little animal life is to be found in the snow-clad regions explored by him, and how much is already known concerning the few *feræ naturæ* which exist there. His mind was engrossed with problems of a very different—and, to him, weightier—kind than those which, under similar circumstances, would have occupied the attention of a naturalist. It must not be supposed, however, that Mr. Whymper was indifferent to the charms of Zoology, for he did not fail to notice and to observe the actions and habits of such animals as chance brought in his way; and we know from his published accounts of travel in other lands, that his powers of observation and description are of no mean order.

When traversing some of the wildest portions of the Alps, he could hardly fail to notice the Chamois, which in certain localities are still tolerably numerous, though seldom permitting a very near approach. On one occasion, however, he obtained an excellent view of a large herd, which he thus describes:—

“Whilst we were resting at this point (the Col which commands a glorious view of the southern side of Monte Rosa, and of the ranges to its east), a large party of vagrant Chamois arrived on the summit of the mountain from the northern side, some of whom—by their statuesque position—seemed to appreciate the grand panorama by which they were surrounded, while others amused themselves, like two-legged tourists, in rolling stones over the cliffs. The clatter of these falling fragments made us look up. The Chamois were so numerous that we could not count them, and clustered round the summit, totally unaware of our presence.

They scattered in a panic, as if a shell had burst amongst them, when saluted by the cries of my excited comrade, and plunged wildly down in several directions, with unfaltering and unerring bounds, with such speed and with such grace that we were filled with admiration and respect for their mountaineering abilities."

Facing this description is a full-page illustration, by Mr. Wolf, of a group of Chamois, which to our thinking is one of the most attractive engravings in the volume. The life-like attitudes and startled expressions of the animals, the timid action of the kid which essays to follow its mother down a precipice, and the fidelity to Nature in the rendering of the mountain gorge in which they are grouped, imparts an air of wildness to the picture, and excites in us a feeling of admiration which is seldom or never called forth by a contemplation of the works of other zoological artists. Quite as beautiful is the vignette, on page 102, of two "Chamois in difficulties" as they descend the almost perpendicular face of a cliff. The *pose* of the animals strikes us as being graceful, and at the same time perfectly natural, the peculiar shape of the animal's foot, so well adapted for climbing, being admirably depicted.

On the previous page Mr. Whymper describes his discovery of a dead Chamois half way up the southern cliffs of the Stockje:—

"We clambered up, and found that it had been killed by a most uncommon and extraordinary accident. It had slipped on the upper rocks, had rolled over and over down a slope of *débris* without being able to regain its feet, had fallen over a little patch of rocks that projected through the *débris*, and had caught the points of both horns on a tiny ledge not an inch broad. It had just been able to touch the *débris* where it led away down from the rocks, and had pawed and scratched until it could no longer touch. It had evidently been starved to death, and we found the poor beast almost swinging in the air, with its head thrown back and tongue protruding, looking to the sky as if imploring help."

We pass over the many spirited descriptions of Alpine scenery which are to be met with throughout the book, since they scarcely come within the scope of our notice. Moreover, the style of Mr. Whymper's narrative will be familiar to those who are acquainted with his 'Scrambles among the Alps,' of which the present volume appears to be a condensed edition, with some new additions and several new illustrations. It is beautifully got up

as regards type and paper, and, besides being an admirable guide-book for aspiring tourists, enables those who stay quietly at home to form a very good idea of the grandeur of Alpine scenery.

Nature cared for and Nature uncared for; a Lecture on Ornithology.

By H. B. HEWETSON. 8vo. pp. 36. London: West, Newman, and Co. Leeds: R. Jackson. 1879.

To a rural audience in a remote Yorkshire village, chiefly known to fame as embosoming the home of the late Charles Waterton—a name familiar to naturalists—Mr. H. B. Hewetson delivered the lecture which in a printed form now lies before us.

Although containing nothing very novel or striking, it has the merit of pointing out to those who may be yet unconvinced, or who may never have given the subject a thought, some of the pleasures and advantages to be derived from a study of Natural History. The discourse is enlivened by a sketch of the life-history of three very familiar birds, whose portraits, copied from Bewick and Wolf, appear in the form of etchings. In advising people to use their powers of observation, Mr. Hewetson offers some sensible remarks, from which we take the following as an example:—

“It is not the abundance of opportunities which makes men great; it is the use they make of few advantages. It is not the confused mass of dry facts which is being daily crammed into the undeveloped brains of our children which will make us a wiser nation. This can only be obtained by our energies being directed towards showing them what to love and what to care to learn; consulting always, as far as possible, a child's temperament and inclination, and never forgetting that England's greatness, in a large measure, depends for its continuance, as it has had to be indebted for its rise, to the brains of early dunces. * * * * It is not everybody who cares for birds, or stones, or shells, or butterflies, or flowers, but there is not one of us who can say, if he dare, that any object in Nature is beneath his notice, even though it may be in itself uninteresting in comparison with what in the scale of beauty is more lovely and admirable. It is but a part of one harmonious whole; a silent proof of the great Creator's powers, as incomprehensible when exerted in the creation of the meanest worm that crawls in the dust beneath our feet, as it is in the vast ordination of myriads of worlds displayed to our eyes in the starry heavens, illimitable and inconceivable.”
